

**REMARKS**

Claims 1-135 are currently pending in the present application. Applicant acknowledges with appreciation the indication of allowable subject matter in claims 18-25, 46, 47, 67-70, 91, 92, 107-109, 124 and 131. Claims 1-8, 12-17, 26-36, 41-45, 48-51, 53, 59-66, 71-78, 87-90, 93-96, 101-106, 110-115, 122, 123, 125, 126, 129, 130, 132 and 133 have been withdrawn from consideration. By this amendment, claims 9, 37, 79, 97, 128, and 135 have been amended. No new matter will be entered in the application via these amendments. In addition, claims 11 and 52 have been cancelled without prejudice or disclaimer.

Applicants respectfully request reconsideration of the application in view of the above amendments and the following remarks.

1. Claims 9-10, 37 and 40 have been rejected under 35. U.S.C. §102(e) “as being anticipated by DiGiovanni et al (5,802,236).” This ground of rejection of claims 9-10, 37 and 40 is respectfully traversed because each of the recited claim elements is not found in the cited reference.

Specifically, independent claim 9 recites:

9. An optical fibre with a waveguide structure having a longitudinal direction, said optical fibre having:

a core region extending along the longitudinal direction,

a cladding region extending along the longitudinal direction, said cladding region comprising an at least substantially two-dimensionally periodic structure comprising primary, elongated elements each having a centre axis extending in the longitudinal direction of the waveguide, the primary elements having a refractive index being lower than a refractive index of any material adjacent to the elongated elements,

the periodic structure being defined, in a cross-section perpendicular to the longitudinal direction, by a unit cell, where the sum of all areas of elongated elements, which areas are comprised within the unit cell, is larger than 1.2 times the area of that primary element having its centre axis not positioned outside the unit cell and having the largest area; and wherein the periodic structure comprises secondary elongated elements having a refractive index being larger than that of any material adjacent thereto and to any material being adjacent to a primary element.

The cited reference, DiGiovanni ('236), fails to show this arrangement.

It is fundamental that a prime facie case of anticipation requires a showing that each of the claim elements is shown in the cited reference. Because this showing cannot be made, the rejection of claims 9-10, 37 and 40 should be withdrawn.

For at least similar reasons, independent claim 37 ("wherein the periodic structure further comprises one or more secondary elongated elements having a refractive index higher than that of any material adjacent thereto or adjacent to any primary elements, the secondary elements each has a centre axis extending in the longitudinal direction of the fibre") and dependent claims 10 and 40 are also believed to be patentably distinct from DiGiovanni ('236). Reconsideration and withdrawal of this ground of rejection is requested.

2. Claims 38-39 have been rejected under 35. U.S.C. §103(a) "as being unpatentable over DiGiovanni et al. ('236) in view of DiGiovanni et al. ('652)." This ground of rejection of claims 38-39 is respectfully traversed because each of the recited claim elements is not found in the cited references.

Dependent claims 38 and 39 depend directly from independent claim 37 and, therefore, include all the limitations included in the independent claim. As discussed above with

respect to claim 37, Applicant's respectfully submit that DiGiovanni et al. ('236) fails to disclose or suggest each element of that claim. DiGiovanni et al. ('652) does nothing to remedy this deficiency.

It is fundamental that a prime facie case of obviousness requires a showing that each of the claim elements is shown in the cited references. Because this showing cannot be made, the rejection of claims 38-39 should be withdrawn.

3. Claims 54-58, 11, 52, (79-86, 97-100), (116-121, 127-128, 134-135) have been rejected under 35. U.S.C. §103(a) "as being unpatentable over DiGiovanni et al. ('236) in view of DiGiovanni et al. ('652)". This ground of rejection of claims 54-58, 11 and 52 is respectfully traversed because each of the recited claim elements is not found in the cited references.

Specifically, independent claim 54 states:

54. An optical fibre with a waveguide structure having a longitudinal direction, said optical fibre having:

- a core region extending along the longitudinal direction,
- a cladding region extending along the longitudinal direction, said cladding region comprising an at least substantially two-dimensionally periodic structure comprising primary, elongated elements each having a centre axis extending in the longitudinal direction of the waveguide, the primary elements each having a refractive index being lower than a refractive index of any material adjacent to the primary element,

the periodic structure further comprising secondary, elongated elements each having a refractive index being larger than that of any material adjacent thereto and any material adjacent to a primary element, each secondary element having a centre axis extending in the longitudinal direction of the fibre.

The cited references, DiGiovanni ('236) and DiGiovanni ('652), fail to show this arrangement.

It is fundamental that a prime facie case of obviousness requires a showing that each of the claim elements is shown in the cited references. Because this showing cannot be made, the rejection of claims 54-58 should be withdrawn. Claims 11 and 52 have been cancelled without prejudice or disclaimer.

With respect to claims 79-86, 97-100, this ground of rejection is respectfully traversed because each of the recited claim elements is not found in the cited references.

Specifically, independent claim 79 reads as follows:

79. An optical fibre with a waveguide structure having a longitudinal direction, said optical fibre having:

- a core region extending along the longitudinal direction,
- a cladding region extending along the longitudinal direction, said cladding region comprising an at least substantially two-dimensionally periodic structure comprising primary, elongated elements each having a centre axis extending in the longitudinal direction of the waveguide, the primary elements each having a refractive index being lower than a refractive index of any material adjacent to the primary element,

the periodic structure being, in a cross-section perpendicular to the longitudinal direction, defined by a unit cell, and where a polygon is defined:

- having centres of primary elements in its vertices,
- not enclosing any centres of other primary elements than those having their centres at the vertices of the polygon, and
- having an area less than or equal to that of the unit cell,

the polygon being a regular, hexagonal polygon;

wherein the core region comprises a first additional elongated element extending in the longitudinal direction of the fibre.

The cited references, DiGiovanni ('236) and DiGiovanni ('652), fail to show this arrangement.

It is fundamental that a prime facie case of obviousness requires a showing that each of the claim elements is shown in the cited references. Because this showing cannot be made, the rejection of claims 79-86, 97-100 should be withdrawn.

With respect to claims 116-121, 127-128, 134-135 this ground of rejection is respectfully traversed because each of the recited claim elements is not found in the cited references. The cited references, DiGiovanni ('236) and DiGiovanni ('652), fail to show this arrangement.

It is fundamental that a prime facie case of obviousness requires a showing that each of the claim elements is shown in the cited references. Because this showing cannot be made, the rejection of claims 116-121, 127-128, 134-135 should be withdrawn.

4. With respect to claims 79-86 and 97-100 as applied above, the Examiner states that "Official Notice is taken ... for motivation of selecting single mode or multimode ('236 col. 3 line 27+ lines 26-36)." This ground of rejection of claims 79-86 and 97-100 is respectfully traversed because each of the recited claim elements is not found in the cited references.

As discussed above, the cited references fail to disclose each element of independent claim 79. The Examiner taking "Official Notice is taken ... for motivation of selecting single mode or multimode" does nothing to remedy this deficiency. It is fundamental that a prime facie case of obviousness requires a showing that each of the claim elements is

shown in the cited references. Because this showing cannot be made, the rejection of claims 79-86 and 97-100 should be withdrawn.

5. With respect to claims 116-121, 127-128, 134-135 as applied above, the Examiner states that "Official Notice is taken, for the motivation of simpler, less costly method of making ('236 col. 2 line 3) PBG/PCF sensors, fiber amplifiers, or lasers." This ground of rejection of claims 116-121, 127-128, 134-135 is respectfully traversed because each of the recited claim elements is not found in the cited references.

As discussed above, the cited references fail to disclose each element of independent claim 116. The Examiner taking that "Official Notice is taken, for the motivation of simpler, less costly method of making ('236 col. 2 line 3) PBG/PCF sensors, fiber amplifiers, or lasers" does nothing to remedy this deficiency. It is fundamental that a prime facie case of obviousness requires a showing that each of the claim elements is shown in the cited references. Because this showing cannot be made, the rejection of claims 116-121, 127-128, 134-135 should be withdrawn.

### **CONCLUSION**

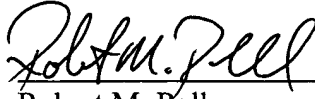
For the above-stated reasons, this application is respectfully asserted to be in condition for allowance. An early and favorable examination on the merits is requested. In the event that a telephone conference would facilitate the examination of this application in any way, the Examiner is invited to contact the undersigned at the number provided.

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Respectfully submitted,  
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